Attorney Docket No.: YO999-131

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Application

Applicant(s): J.L. Hellerstein et al.
Docket No.: YO999-131
Serial No.: 09/359,874
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Group: 2126
Examiner: The T. Ho

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Signature: [signature] Date: May 3, 2004

Title: Systems and Methods for Exploratory Analysis of Data for Event Management

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SUPPLEMENTAL APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This Supplemental Appeal Brief is submitted in response to the Office Action dated February 2, 2004 in the above-referenced application, in which the Examiner reopened prosecution in response to the Appeal Brief filed November 10, 2003.

Applicants (hereinafter referred to as "Appellants") have submitted concurrently herewith a response to the Office Action, requesting reinstatement of the appeal pursuant to 37 C.F.R. §1.193(b)(2).

REAL PARTY IN INTEREST

The present application is assigned to International Business Machines Corporation, as evidenced by an assignment recorded October 25, 1999 in the U.S. Patent and Trademark Office at Reel 010330, Frame 0654. The assignee, International Business Machines Corporation, is the real party in interest.

RELATED APPEALS AND INTERFERENCES

There are no known related appeals and interferences.

STATUS OF CLAIMS

Claims 1-20 stand finally rejected under 35 U.S.C. §103(a). Claims 1-20 are appealed.

STATUS OF AMENDMENTS

There has been no amendment filed subsequent to the final rejection. However, a Response to Final Office Action was filed on July 8, 2003, along with the Notice of Appeal.

SUMMARY OF INVENTION

The present invention provides techniques for use in analyzing non-fully structured data which is associated with one or more events. In one aspect, a technique of the invention comprises the following steps. At least a portion of the non-fully structured data is parsed according to one or more parsing rules to convert the at least a portion of non-fully structured data to structured data. Presentation operations are provided which are respectively able to provide a presentation of at least a portion of the non-fully structured data, format at least a portion of the structured data to provide a presentation of a graphical representation of the at least a portion of structured data, and format at least a portion of the structured data to provide a presentation of a summary representation of the at least a portion of structured data. Data associated with two or more of the presentations is coordinated, when desired, to enable a coordinated analysis of the data (Specification, page 6, line 3, through page 7, line 2; and page 20, lines 3-12).

Thus, the present invention provides systems and methods for providing exploratory analysis of data for event management. In an illustrative embodiment, the invention provides for a methodology and related system referred to hereinafter as an "event browser" that provides an integrated environment for analysis of a large volumes of semi-structured or non-structured data, such as event logs. In such an illustrative embodiment of the invention, the event browser

advantageously provides: (1) scalable analysis of large volumes of unstructured data with diverse content and data formats; (2) an architecture to support multiple types of views and analyses of such data; (3) mechanisms to support the iterative refinement of the information in the raw data that is included in the visualization and analysis environment; (4) several specific viewers for analysis of event data (Specification, page 4, lines 9-19).

An event browser of the invention may be implemented in a form which includes certain functional components. To deal with textual messages directly, the event browser of the invention may integrate a parsing mechanism or engine (e.g., parser 20 of FIG. 1) and an analysis tool (e.g., analysis tool 25 of FIG. 1) in one package. The role of the parsing engine may be to translate an event message into a set of attribute values defined by parsing rules (e.g., rules 30 of FIG. 1). For example, if parsing rules define information about host name, event type and time stamp, an event message is translated into a tuple of {host name, event type, time} through the parsing. In other words, the parsing engine may translate semi-structured or non-structured textual data into structured data. The analysis tool, therefore, does not need to worry about the detailed message format, and can focus on analysis and the GUI (graphical user interface) to an end-user. As a result, the detailed textual format of a log file is preferably hidden from an end-user, until he wants to see it. This allows users to analyze log files with different formats in a unified and simple way (Specification, page 4, line 20, through page 5, line 6).

To take advantages of different analysis techniques, an event browser of the invention may provide an extensible architecture to integrate event graphs (e.g., "plot viewer" as illustrated in FIG. 14), event summarization (e.g., "attribute viewer" as illustrated in FIG. 12), detailed message (e.g., "message viewer" as illustrated in FIG. 17) and other possible viewers. Further, the event browser may provide an infrastructure for exchanging information amongst the viewers. Each of these three viewers has its own advantages for viewing and manipulating data. For example, the attribute viewer of the invention may be good at summarization and query-type operations. From the attribute viewer, a user may conveniently select all events associated with a set of hosts and event types. It also may summarize events by their host types and event types and thus provide summarization of

a log to a user. The plot viewer of the invention may display a large amount of individual events in one window. Therefore, a user may view event relationships and discover event patterns. In addition, through the use of standard visualization techniques, a user may zoom in for details and zoom out for a larger view, and rubber-band to select "interesting" events. The message viewer of the invention may provide the capability to view a set of raw event messages. This may enable a user to further see detailed and application specific information which may be very difficult to parse out or not worth parsing out, but may be needed for diagnosis (Specification, page 6, lines 6-18).

The event browser of the invention may not only provide these three individual viewers, but also may combine and coordinate two or more of these viewers for analyzing events. For example, a user can very easily select a set of interesting events for a set of hosts and event types from the attribute viewer by highlighting these hosts and event types, then use the plot viewer to see the relationship among the selected events. From the plot viewer, he can further select a small set of suspicious events by dragging a rubber-band, and displaying the original textual messages related to the selected events in the message viewer. Further, by highlighting, coloring, or otherwise selecting events in one viewer, he can cause to have similarly modified presentations of these events in other viewers. This capability is referred to as "coordinated views." Accordingly, the event browser provides a novel event visualization and analysis platform and can assist a user in discovering "useful" information which can not be revealed by any conventional tool (Specification, page 6, line 19, through page 7, line 2).

In another aspect of the invention, the event browser may provide interactive and iterative refinement of parsing rules. A role of a parsing engine is to pick out the important information from textual messages and translate the unstructured data into structured data for analysis. Therefore, the ability of analysis tools highly depends on what is parsed. In practice, finding the right information to parse out from a message is not an easy task, because a raw message contains various levels of details and a user certainly does not want to be flooded by this information. Usually, at first, a user is only interested in the most important information, such as host name and event type. But as the user analyzes the data, the user may want more details or other types of information, such as

destination or severity level. Therefore, the parsing rule needs to be redefined to include additional information. Conventionally, the process of defining parsing rules is done in an isolated way. That is, if a user needs more information, the user has to use a separate tool to edit the parsing rule file, and then rerun the parsing and the analysis. Since the event browser integrates parsing engine and analysis, it provides a feedback loop for a user to modify parsing rules in an integrated environment (Specification, page 7, lines 3-17).

ISSUE PRESENTED FOR REVIEW

Whether claims 1-20 are unpatentable under 35 U.S.C. §103(a) over U.S. Patent No. 6,118,936 to Lauer (hereinafter "Lauer") in view of Appellants' specification at page 2, lines 18, 19, 26 and 27 (hereinafter "alleged APA") and further in view of U.S. Patent No. 5,867,229 to Stevens (hereinafter "Stevens").

GROUPING OF CLAIMS

Claims 1, 4-12 and 15-20 stand or fall together. Claims 2 and 13 stand or fall together. Claims 3 and 14 stand or fall together.

ARGUMENT

Appellants incorporate by reference herein the disclosure of all previous responses filed in the present application, namely: an Amendment and Response to Office Action dated January 13, 2003; a Response to Final Office Action dated July 8, 2003; and an Appeal Brief dated November 10, 2003.

Before presenting substantive arguments, Appellants again respectfully point out that a petition for a two-month extension of time had been filed concurrent with the Appeal Brief dated November 10, 2003. However, Appellants believe that such an extension was necessitated due to an unreasonable delay on the part of the U.S. Patent and Trademark Office in responding to Appellants' Response to Final Office Action. That is, Appellants filed the Response to Final Office

Action and Notice of Appeal on July 8, 2003, which was stamped as being received by OPIE on July 10, 2003. Nonetheless, after making several inquiries to the U.S. Patent and Trademark Office, including to the Examiner, Appellants did not receive an Advisory Action until over 3 ½ months after filing the Response to Final Office Action and Notice of Appeal, i.e, October 30, 2003, thus necessitating the two-month extension of time. Appellants respectfully request reimbursement of the fee associated with the extension of time to the degree that the delay was not caused by Appellants. Appellants would also appreciate express acknowledgment that such request is being considered or has been considered, and an indication of any decision pertaining to such request.

Turning now to the substantive issue of whether claims 1-20 are unpatentable under 35 U.S.C. §103(a) over Lauer in view of the alleged APA in further view of Stevens, the present Office Action contends that the cited combination discloses all of the claim limitations recited in the subject claims. More particularly, the present Office Action introduces a new reference, Stevens, in combination with Lauer and the alleged APA, in order to attempt to establish a prima facie case of obviousness under 35 U.S.C. §103(a). Appellants respectfully assert that the cited combination fails to establish a prima facie case of obviousness under 35 U.S.C. §103(a), as specified in M.P.E.P. §2143.

As set forth therein, M.P.E.P. §2143 states that three requirements must be met to establish a prima facie case of obviousness. First, there must be some suggestion or motivation to combine reference teachings. Second, there must be a reasonable expectation of success. Third, the cited combination must teach or suggest all the claim limitations. While it is sufficient to show that a prima facie case of obviousness has not been established by showing that one of the requirements has not been met, Appellants respectfully believe that none of the requirements have been met.

As pointed out in Appellants' previous responses, the present invention, for example as recited in independent claim 1, defines a processor-based method for use in analyzing non-fully structured data which is associated with one or more events, comprising the following steps. At least a portion of the non-fully structured data is parsed according to one or more parsing rules to convert the at least a portion of non-fully structured data to structured data. Presentation operations are

provided which are respectively able to provide a presentation of at least a portion of the non-fully structured data, format at least a portion of the structured data to provide a presentation of a graphical representation of the at least a portion of structured data, and format at least a portion of the structured data to provide a presentation of a summary representation of the at least a portion of structured data. Data associated with two or more of the presentations is coordinated, when desired, to enable a coordinated analysis of the data. Independent claim 9 defines a system-based invention having similar limitations, while independent claim 12 and independent claim 20 respectively define an apparatus-based invention and an article of manufacture-based invention having similar limitations.

Lauer is directed to a signaling network management system for converting network events into standard form and then correlating the standard form events with topology and maintenance information. The alleged APA on page 2 of Appellants' specification refers to mutually exclusive data viewing approaches, i.e., viewing raw data, viewing summary information, and viewing graphical displays. Stevens is directed to techniques for providing video effects using a video record/playback device.

First, Appellants assert that no motivation or suggestion exists to combine Lauer, the alleged APA, and Stevens. For at least this reason, a prima facie case of obviousness has not been established. As asserted in Appellants' previous responses, motivation to combine cannot come from the [Appellants'] own specification. This is impermissible hindsight. In fact, Appellants' specification points out the very deficiencies from which approaches such as those taught by Lauer suffer.

Appellants' specification at page 2, line 18, through page 4, line 7 (the source of the alleged APA) describes three different, but mutually exclusive, ways to analyze event logs, i.e, viewing raw data, viewing summary information, and viewing graphical displays. As pointed out, each of them has its own advantages. Directly reading the textual messages provides the most detailed information of event messages. The aggregated event analysis provides a nice scaling property and shows summarization. The event plot can reveal event patterns and relationship among events.

Most available products for analyzing a log file specialize on one type of log file. Unfortunately, all of these special log analyzers only support summarization analysis. None of them can be used to visualize event messages and/or see original messages. On the other hand, there are many general graphical tools. These tools aim to support either graphical analysis of numerical data or aggregated level summarization. However, none of them provide both types of analysis. In addition, these tools usually only take structured data as inputs and can not handle textual data directly.

Further, Appellants' specification points out that there are many general graphical tools, such as Diamond, Data explorer, SAS, PowerPlay, etc. These tools aim to support either graphical analysis of numerical data, such as Diamond, Data explorer, SAS, etc., or aggregated level summarization such as PowerPlay and other OLAP (On Line Analytical Process) products. However, none of them provide both types of analysis. In addition, these tools usually only take structured data as inputs and can not handle textual data directly.

Therefore, as the specification explains, it would be highly desirable to provide systems and methods which integrate different analysis approaches, thus providing a user with the capability and flexibility to perform multiple types of analysis on raw data for event management purposes. This is what the claimed invention is directed toward.

Despite the Examiner's contention, there is nothing in Lauer nor Stevens that would suggest motivation to yield the integrated presentation and analysis approach of the claimed invention. Further, since the approaches described in the specification are generally mutually exclusive, there is no known motivation to combine any of them into a single presentation and analysis technique, as in the claimed invention.

Furthermore, the Federal Circuit has stated that when patentability turns on the question of obviousness, the obviousness determination "must be based on objective evidence of record" and that "this precedent has been reinforced in myriad decisions, and cannot be dispensed with." In re Lee, 277 F.3d 1338, 1343 (Fed. Cir. 2002). Moreover, the Federal Circuit has stated that "conclusory statements" by an examiner fail to adequately address the factual question of motivation,

which is material to patentability and cannot be resolved "on subjective belief and unknown authority." Id. at 1343-1344.

In the present Office Action at pages 3 and 4, the Examiner provides the following statements to prove motivation to combine Lauer, the alleged APA, and Stevens, with emphasis supplied: "[i]t would have been obvious to apply the teachings of APA to the system of Lauer because this provides the user different approaches to view the structured data . . . [i]t would have been obvious to apply the teachings of Stevens to the system of Lauer for analysis purpose[s] because the user can view different representations of the data at the same time . . . therefore providing the user great flexibility while reducing the time required for analysis."

Appellants again submit that these statements are based on the type of "subjective belief and unknown authority" that the Federal Circuit has indicated provides insufficient support for an obviousness rejection. More specifically, the Examiner fails to identify any objective evidence of record which supports the proposed combination. Again, motivation to combine cannot come from the Appellants' own specification. Also, the "great flexibility" that the Examiner cites is apparently taken from Stevens (column 3, lines 7 and 8). However, the "great flexibility" referred to in Stevens has to do with the "stop action and slow motion control" provided by the video record/playback device of Stevens and not anything to do with multiple playback views.

Second, Appellants assert that there is no reasonable expectation of success in achieving the present invention through a combination of Lauer, the alleged APA, and Stevens. For at least this reason, a prima facie case of obviousness has not been established. As mentioned above, despite the assertion in the outstanding Office Action, Appellants do not believe that Lauer, the alleged APA, and Stevens are combinable since it is not clear how one would combine them given that the various approaches are mutually exclusive. There are no teachings in the cited combination as to how to coordinate data associated with two or more of the presentations, when desired, to enable a coordinated analysis of the data, as in the claimed invention.

Third, Appellants assert that the combination of Lauer, the alleged APA, and Stevens fails to teach or suggest all of the claim limitations of independent claims 1, 9, 12 and 20. For at least this

reason, a prima facie case of obviousness has not been established. Again, assuming arguendo that Lauer, the alleged APA, and Stevens could be properly combined, which for at least the reasons above it is believed that they can not be properly combined, the combination fails to teach or suggest all claim elements in independent claims 1, 9, 12 and 20.

By way of example, the inventions of claims 1, 9, 12 and 20 recite "coordinating data associated with two or more of the presentations, when desired, to enable a coordinated analysis of the data." This is explained, for example, at page 6 of the specification where it is stated that the invention not only preferably provides multiple viewers, but also combines and coordinates these viewers for analyzing events. For example, a user can very easily select a set of interesting events for a set of hosts and event types from the attribute viewer (e.g., summary viewing) by highlighting these hosts and event types, then use the plot viewer (e.g., graphical viewing) to see the relationship among the selected events. From the plot viewer, he can further select a small set of suspicious events by dragging a rubber-band, and displaying the original textual messages related to the selected events in the message viewer (e.g., raw data viewing). Further, by highlighting, coloring, or otherwise selecting events in one viewer, he can cause to have similarly modified presentations of these events in other viewers.

Assuming arguendo that it is proper to combine Lauer, the alleged APA, and Stevens to yield a group of presentation techniques, the cited combination is silent as to "coordinating data associated with two or more of the presentations, when desired, to enable a coordinated analysis of the data," as expressly recited in independent claims 1, 9, 12 and 20. The Office Action points to column 2, line 64, through column 3, line 3, of Stevens as teaching the claimed coordination feature. However, this portion of Stevens is very different than the claimed feature. The cited portion of Stevens states:

> FIG. 4 shows an event, indicated by the stick . . . 32, being simultaneously recorded via four different video cameras 34 a-d. The four views of the same event are stored in the random storage system 10, and then may be played back synchronously and simultaneously as four displays. In this manner a single event may be analyzed in real time or slow motion at the same time without requiring mental correlation and synchronization of the event for individual views. For example for instant replay at a sporting event, the replay referee sees

> the same image from different views simultaneously rather than having to look at each view separately in sequence. With the stop action and slow motion control this provides great flexibility while reducing the time required for the analysis.

Thus, it is clear that Stevens is not "coordinating data associated with two or more of the presentations, when desired, to enable a coordinated analysis of the data," as in the claimed invention.

As explained above, in an embodiment of the invention, not only are three individual viewers provided, but the invention also provides combining and coordinating two or more of these viewers for analyzing events. For example, a user can very easily select a set of interesting events for a set of hosts and event types from the attribute viewer by highlighting these hosts and event types, then use the plot viewer to see the relationship among the selected events. From the plot viewer, he can further select a small set of suspicious events by dragging a rubber-band, and displaying the original textual messages related to the selected events in the message viewer. Further, by highlighting, coloring, or otherwise selecting events in one viewer, he can cause to have similarly modified presentations of these events in other viewers. This capability is referred to as "coordinated views." Accordingly, the invention provides a novel event visualization and analysis platform and can assist a user in discovering "useful" information which can not be revealed by any conventional tool (Specification, page 6, line 19, through page 7, line 2).

In contrast, Stevens merely plays back four different views of an event as four separate displays. There is no "coordinating data associated with two or more of the presentations, when desired, to enable a coordinated analysis of the data." In fact, Stevens states that there is no "synchronization of the event for individual views" (column 3, line 2).

Lastly, Appellants assert that a combination of Stevens with Lauer or the alleged APA is improper since Stevens is clearly non-analogous art. As mentioned above, Lauer is directed to a signaling network management system for converting network events into standard form and then correlating the standard form events with topology and maintenance information. The alleged APA on page 2 of Appellants' specification refers to mutually exclusive data viewing approaches

associated with managing networked systems and applications, i.e., viewing raw data, viewing summary information, and viewing graphical displays. Stevens is directed to techniques for providing video effects using a video record/playback device. Thus, while Lauer and the alleged APA is directed toward network event management, Stevens has nothing to do with network event management. Rather, Stevens is limited to a multiple access record/playback device, such as a digital disk recorder, used for video effects (see Abstract of Stevens). Appellants assert that one skilled in the art of network event management would not look to teachings pertaining to a multiple access record/playback device used for video effects such as Stevens. Thus, a combination including Stevens is improper.

For at least the above reasons, Appellants respectfully request withdrawal of the §103 rejections of independent claims 1, 9, 12 and 20.

The remainder of the claims rejected over the Lauer-alleged APA-Stevens combination depend, either directly or indirectly, from claims 1, 9 or 12, which are believed patentable for the reasons set forth above. Furthermore, the remaining claims define additional patentable subject matter in their own right.

By way of example only, claims 2 and 13 recite the step/operation of providing coordinated views for at least two of the graphical representation, the summary representation and the non-fully structured data presentation. The present Office Action again relies on Stevens in rejecting this claimed feature. However, as explained above, Stevens is completely silent as to providing "coordinated views."

Further, by way of example only, claims 3 and 14 recite the step/operation of modifying one or more parsing rules to affect the parsing operation. The portion of Lauer cited to support this rejection (i.e., column 14, lines 50-52) deals with modifying a presentation, not modifying parsing rules. The present Office Action fails to address this deficiency.

For at least the above reasons, Appellants respectfully request withdrawal of the §103 rejections of dependent claims 2-8, 10, 11 and 13-19.

Accordingly, for at least the foregoing reasons, claims 1-20 are believed to be patentable over the cited references. As such, the application is asserted to be in condition for allowance, and favorable action is respectfully solicited.

Respectfully submitted,

William E. Lewis

Date: May 3, 2004

William E. Lewis
Attorney for Applicant(s)
Reg. No. 39,274
Ryan, Mason & Lewis, LLP
90 Forest Avenue
Locust Valley, NY 11560
(516) 759-2946

APPENDIX

1. A processor-based method for use in analyzing non-fully structured data which is associated with one or more events, the method comprising the steps of:

parsing at least a portion of the non-fully structured data according to one or more parsing rules to convert the at least a portion of non-fully structured data to structured data;

providing presentation operations which are respectively able to provide a presentation of at least a portion of the non-fully structured data, format at least a portion of the structured data to provide a presentation of a graphical representation of the at least a portion of structured data, and format at least a portion of the structured data to provide a presentation of a summary representation of the at least a portion of structured data; and

coordinating data associated with two or more of the presentations, when desired, to enable a coordinated analysis of the data.

2. The method of Claim 1, further comprising the step of providing coordinated views for at least two of the graphical representation, the summary representation and the non-fully structured data presentation.

3. The method of Claim 1, further comprising the step of modifying the one or more parsing rules to affect the parsing operation.

4. The method of Claim 1, further comprising the step of providing a rubber-banding operation in association with the graphical representation.

5. The method of Claim 1, further comprising the step of providing a zooming operation in association with the graphical representation.

6. The method of Claim 1, wherein the summary representation includes one or more attributes associated with the at least a portion of structured data.

7. The method of Claim 1, further comprising the step of providing a selection operation in association with aspects of at least one of the non-fully structured data and the structured data.

8. The method of Claim 1, further comprising the step of providing a filtering operation in association with aspects of at least one of the non-fully structured data and the structured data.

9. A system for use in analyzing non-fully structured data which is associated with one or more events, the system comprising:

a parsing engine which parses at least a portion of the non-fully structured data according to one or more parsing rules to convert the at least a portion of non-fully structured data to structured data;

viewers which are respectively able to provide a presentation of at least a portion of the non-fully structured data, format at least a portion of the structured data to provide a presentation of a graphical representation of the at least a portion of structured data, and format at least a portion of the structured data to provide a presentation of a summary representation of the at least a portion of structured data , wherein data associated with two or more of the presentations is coordinated, when desired, to enable a coordinated analysis of the data; and

a selection and control engine coupled to the parsing engine and the viewers which controls operations associated with the parsing engine and the viewers.

10. The system of Claim 9, wherein the operations controlled by the selection and control engine include at least one of data and parsing rule access.

11. The system of Claim 9, wherein the operations controlled by the selection and control engine include communications between the viewers.

12. Apparatus for use in analyzing non-fully structured data which is associated with one or more events, the apparatus comprising:

at least one processor operable to: (i) parse at least a portion of the non-fully structured data according to one or more parsing rules to convert the at least a portion of non-fully structured data to structured data; (ii) provide presentation operations which are respectively able to provide a presentation of at least a portion of the non-fully structured data, format at least a portion of the structured data to provide a presentation of a graphical representation of the at least a portion of structured data, and format at least a portion of the structured data to provide a presentation of a summary representation of the at least a portion of structured data; and (iii) coordinate data associated with two or more of the presentations, when desired, to enable a coordinated analysis of the data; and

memory coupled to the at least one processor for storing at least one of the non-fully structured data, the structured data and the one or more parsing rules.

13. The apparatus of Claim 12, wherein the at least one processor is further operable to provide coordinated views for at least two of the graphical representation, the summary representation and the non-fully structured data presentation.

14. The apparatus of Claim 12, wherein the at least one processor is further operable to modify the one or more parsing rules to affect the parsing operation.

15. The apparatus of Claim 12, wherein the at least one processor is further operable to provide a rubber-banding operation in association with the graphical representation.

16. The apparatus of Claim 12, wherein the at least one processor is further operable to provide a zooming operation in association with the graphical representation.

17. The apparatus of Claim 12, wherein the summary representation includes one or more attributes associated with the at least a portion of structured data.

18. The apparatus of Claim 12, wherein the at least one processor is further operable to provide a selection operation in association with aspects of at least one of the non-fully structured data and the structured data.

19. The apparatus of Claim 12, wherein the at least one processor is further operable to provide a filtering operation in association with aspects of at least one of the non-fully structured data and the structured data.

20. An article of manufacture for use in analyzing non-fully structured data which is associated with one or more events, comprising a machine readable medium containing one or more programs which when executed implement the steps of:

parsing at least a portion of the non-fully structured data according to one or more parsing rules to convert the at least a portion of non-fully structured data to structured data;

providing presentation operations which are respectively able to provide a presentation of at least a portion of the non-fully structured data, format at least a portion of the structured data to provide a presentation of a graphical representation of the at least a portion of structured data, and format at least a portion of the structured data to provide a presentation of a summary representation of the at least a portion of structured data; and

coordinating data associated with two or more of the presentations, when desired, to enable a coordinated analysis of the data.